

# 3

## SYSTEMIC RISK AND PRUDENTIAL POLICY



### 3 SYSTEMIC RISK AND PRUDENTIAL POLICY

The contemporaneous indicators of systemic financial stress rose significantly in 2022 Q3, accentuating the rising trend observed since mid-2021. These financial stresses largely reflect the economic fallout from the war in Ukraine, such as increased uncertainty and heightened inflationary pressures, which in Europe have been driven in particular by rising energy and food costs and global supply chain disruptions. However, the combination of higher uncertainty and inflation has not, for the moment, slowed the reduction in the key credit and activity indicators that inform the quarterly decisions on the countercyclical capital buffer (CCyB), after these indicators were driven up in 2020 by the economic impact of COVID-19.

In the coming quarters, the substantial economic uncertainty, coupled with monetary policy tightening to curb inflation, will exacerbate the downside risks to the economic growth outlook and to the provision of financing to the economy. Against this background, it is advisable to hold the CCyB rate at 0%. Meanwhile, developments in the real estate sector warrant particular attention, given the persistence of the moderate signs of price imbalances identified in previous editions of the Financial Stability Report (FSR). Although the most recent indicators show some signs of a possible slowdown in the real estate market, this cannot be confirmed until more information is available. Furthermore, while there is no evidence of a widespread easing of lending standards, some more heavily indebted borrower segments have been identified which would have to adjust their expenditure budgets in a scenario in which macroeconomic risks materialise.

#### 3.1 Analysis of risk indicators and systemic vulnerabilities

**Systemic stress in the financial markets has intensified in recent months due to the persistence of inflationary pressures and higher uncertainty.** The Banco de España's systemic risk indicator (SRI)<sup>1</sup> rose significantly during 2022 Q3, although it remains below the levels reached in March 2020 at the start of the pandemic (see Chart 3.1.1). Tensions increased across all four of the financial segments captured by the SRI – meaning closer correlation between them –, which reduced the diversification opportunities for investors. These developments reflect the tightening of financial conditions prompted by the increase in risk premia associated with the heightened

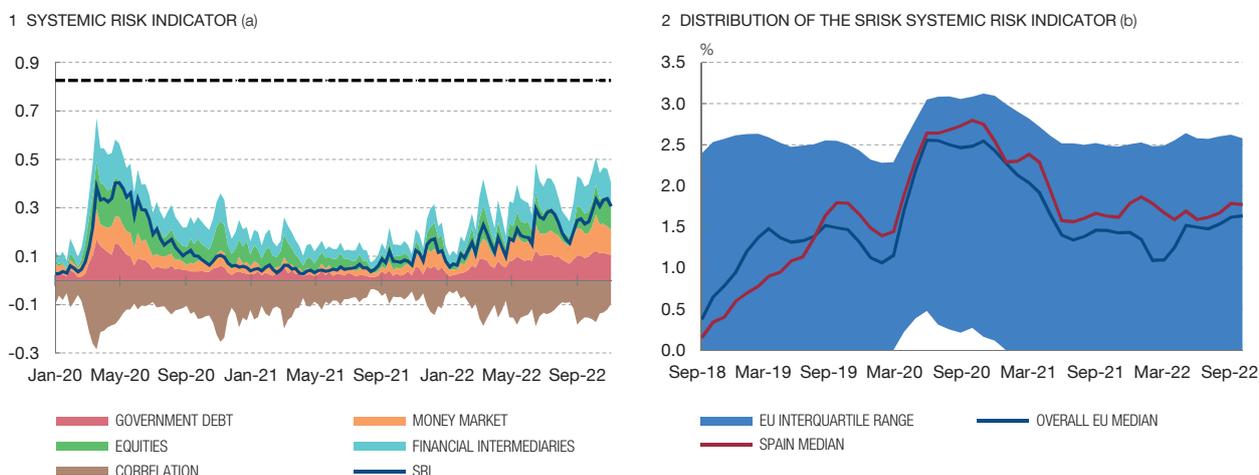
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<sup>1</sup> This indicator comprises information on the four most representative segments of Spain's financial markets (the money, government debt, equity and bank funding markets) and is designed to increase in value when tensions arise simultaneously in these four segments. For a detailed explanation of the SRI calculation methodology, see [Box 1.1 of the May 2013 FSR](#).

Chart 3.1

**THE SRI AND SRISK INDICATORS REMAIN ON AN UPWARD TRAJECTORY, ALBEIT STILL WELL SHORT OF THE LEVELS REACHED IN THE EARLY STAGES OF THE COVID-19 PANDEMIC**

The upturn that began in mid-2021 has continued in 2022, given the persistence of geopolitical and inflationary tensions, the deterioration of the economic outlook and the tightening of financial conditions. In the EU overall, the systemic risk of banks measured by the SRISK indicator has increased since the start of the war in Ukraine. In recent months, Spanish banks, which were initially relatively less affected, have performed more in line with their European counterparts.



**SOURCES:** Datastream, SNL Financial, INE and Banco de España.

- a The systemic risk indicator (SRI) aggregates 12 individual stress indicators (volatilities, interest rate spreads, maximum historical losses, etc.) from four segments of the Spanish financial system. In calculating the SRI, the effect of cross-correlations is taken into account, whereby the SRI registers higher values if the correlation between the four markets is high, and lower values where there is less or negative correlation. For a detailed explanation of this indicator, see [Box 1.1 of the May 2013 FSR](#). The dotted line represents the SRI's historical maximum. Data updated as at 2 November 2022.
- b The SRISK indicator, expressed as a percentage of each institution's total assets, captures the capital shortfall against bank capital requirements at market value in the event of a significant market shock. The parameters used are 4.5% for capital requirements, 10% for the decline in the European equities index, and 22 business days for the period over which the hypothetical market decline occurs; see C. Brownlees and R. Engle (2017), "SRISK: A conditional capital shortfall measure of systemic risk", *The Review of Financial Studies*, Vol. 30. for further details. The SRISK indicator for the months of 2022 Q3 is calculated based on 2022 Q2 assets and liabilities values, drawing on the stock price data of the corresponding month. The series have been smoothed using a three-month moving average. The interquartile range is defined as the difference between the first and third quartiles of the SRISK distribution for EU banks. Data updated as at 30 September 2022.

uncertainty and with the monetary policy measures adopted by the ECB and other authorities to curb inflation. Moreover, the geopolitical tensions and their economic ramifications, particularly those linked to the drastic reduction in the supply of Russian gas to Europe, have also contributed to the systemic financial stresses.

**The SRISK indicator has risen somewhat since March 2022, both for the EU as a whole and for Spanish banks.** The backdrop of higher geopolitical tensions and economic uncertainty has driven up banks' contribution to systemic risk, proxied by the SRISK indicator (see Chart 3.1.2).<sup>2</sup> Following the Russian invasion of Ukraine, the better relative performance of Spanish banks' SRISK brought it closer to the European median. Since July 2022, the median SRISK indicator for Spain's six listed

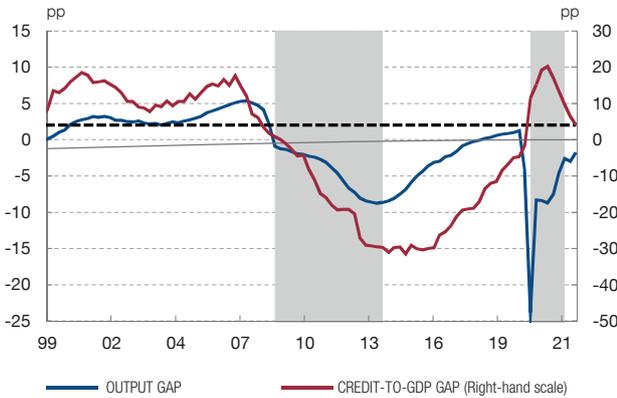
2 See C. Brownlees and R. Engle (2017), "SRISK: A Conditional Capital Shortfall Measure of Systemic Risk", *The Review of Financial Studies*, Vol. 30, Issue 1, pp. 48-79. This indicator measures the market value of the regulatory capital shortfall of an individual bank or the banking sector overall following a significant correction in the equity market. It thus constitutes a systemic risk metric, since the high cost of making up a capital shortfall for the banking sector could distort financial intermediation.

Chart 3.2

**THE CORRECTION OF THE CREDIT-TO-GDP GAP AND THE OUTPUT GAP CONTINUE, ALBEIT MORE SLOWLY IN THE LATTER CASE. IN ADDITION, THE INCREASE IN INFLATION ENTAILS HIGHER RISKS TO GROWTH**

The credit-to-GDP gap narrowed for the third consecutive quarter, but remains above the 2 pp reference threshold against a backdrop of great uncertainty. The output gap has already largely recovered from the deterioration that occurred at the start of the pandemic, but remains in negative values and its rate of recovery is slowing. The upsurge in inflation would also raise the risk of very low, or even negative, growth rates under an adverse scenario. However, if the heightened inflation does not prove enduring, the adverse effects on the risks to growth would be concentrated in the near term.

1 CREDIT-TO-GDP GAP AND OUTPUT GAP (a)



2 IMPACT OF AN INCREASE IN INFLATION ON FUTURE GDP GROWTH (b)



SOURCES: INE and Banco de España.

- a The output gap is the percentage difference between observed GDP and potential quarterly GDP. Values calculated at constant 2010 prices. See P. Cuadrado and E. Moral-Benito (2016), “Potential growth of the Spanish economy”, *Occasional Paper* No 1603, Banco de España. The credit-to-GDP gap is calculated as the difference, in percentage points, between the observed ratio and the long-term trend calculated using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 25,000. This parameter is calibrated to the financial cycles historically observed in Spain. See J. E. Galán (2019), “Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited”, *Occasional Paper* No 1906, Banco de España. Data available up to June 2022. The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1-2021 Q4). The horizontal dotted line represents the credit-to-GDP gap reference threshold (2 pp) for activation of the CCyB.
- b The lines represent the estimated impact of a 1 pp increase in the 12-month inflation rate in a given quarter on the 5th percentile (P5) and 50th percentile (P50) of the distribution of year-on-year GDP growth in various future quarters, conditional on macro-financial variables, the macroprudential policy stance and the inflation rate. The sample comprises the 27 EU countries plus the UK, taking quarterly data between 1990 and 2022. For more details on the methodology used, see J. Galán (2020), “The benefits are at the tail: Uncovering the impact of macroprudential policy on growth-at-risk”, *Journal of Financial Stability*, 100831.

banks has steadily increased, in line with that for European banks, coinciding with the tightening of monetary policy and the deterioration of the economic outlook. However, this index remains significantly lower than in the initial months of the COVID-19 pandemic both for the Spanish banks, and for European banks as a whole.

**The additional recovery in economic activity and the moderation in lending helped the credit-to-GDP gap to continue narrowing in 2022 H1.** This decline further corrected the distortions caused to this indicator by the onset of the COVID-19 pandemic and the abrupt drop in GDP in 2020 (see Chart 3.2.1). In any event, the credit-to-GDP gap remained above the 2 pp reference threshold that signals imbalances in the credit cycle.<sup>3</sup>

3 This threshold applies under the statistical specification used by the Banco de España to calculate the credit-to-GDP gap, adjusted to the historically observed average duration of the credit cycle in Spain. The standardised credit-to-GDP gap (the “Basel gap”) has moved in parallel, but holding at negative levels and below its reference threshold. As discussed in the FSR editions published since 2020, a reduction in GDP for exogenous reasons, such as the pandemic, changes the interpretation of the excess over the threshold, recommending against the activation of measures in this case.

GDP growth has also contributed to the upward path of the output gap, which, however, remains in negative values and is beginning to show some slowdown in its rate of recovery.

**Persistently high inflation has a negative impact on GDP growth, which would be more pronounced in a risk scenario.**<sup>4</sup> Estimates based on a growth-at-risk model for EU countries show that, in the short term, each percentage point increase in the current 12-month inflation rate would have a negative impact of up to 0.9 pp on the real growth rate under an adverse scenario (associated with the materialisation of the series of macro-financial risks identified in this report), although this effect would dissipate over longer time horizons (see Chart 3.2.2).<sup>5</sup> Meanwhile, the effect of inflation on expected GDP growth under a more likely scenario would also be negative, although to a far lesser extent. Furthermore, additional rises in inflation in subsequent quarters would see the risks to growth remain high over a longer period of time.

**The high inflation environment and the rise in interest rates could also have other adverse implications for financial stability.** As discussed in previous chapters, the reduction in real income due to the increase in inflation and the higher cost of debt erode households' and firms' ability to pay. This increases the likelihood of the banking sector having to record additional provisions to cover larger potential losses, thus reducing banks' profitability. This effect would be offset, at least in part, by the increase in net interest income in the banking sector driven by higher interest rates, particularly in the short term. Moreover, this situation could also cause sovereign risk premia to rise, particularly for countries with higher debt levels. This, in turn, would decrease the value of banks' sovereign bond holdings and would further drive up financing costs for the private sector, for which government debt yields typically represent a floor. The upshot would be an increase in the risks linked to the sovereign-bank nexus, albeit mitigated by factors such as longer maturities and the greater stability and diversification in terms of holders of Spanish government debt as compared with previous periods.

**The indicators of real estate market imbalances continue to show moderate signs of overvaluation.** These indicators of imbalances in house prices, measured in real terms, have held in positive territory since 2020, albeit close to their equilibrium levels (see Chart 3.3.1). The imbalances owe both to rising house prices and the drop in disposable income prompted by the onset of the COVID-19 pandemic,

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4 This risk scenario corresponds to the level of GDP growth that would occur with a 5% probability, at the lower end of the distribution of possible GDP growth levels in future quarters.

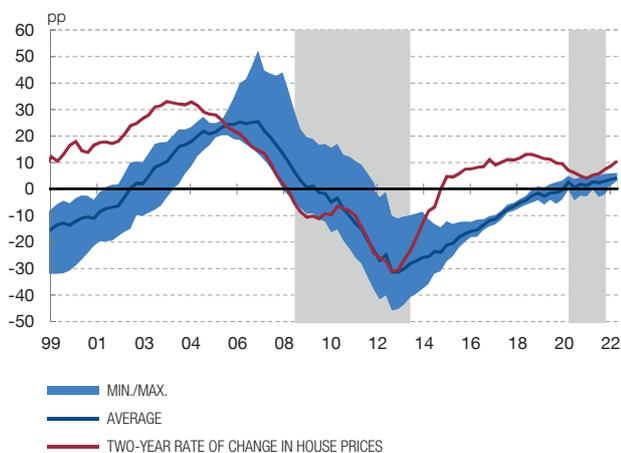
5 A model is estimated based on quantile regressions for the distribution of GDP growth conditional on macro-financial variables, the macroprudential policy stance and the inflation rate. The sample comprises the 27 EU countries plus the United Kingdom, taking quarterly data between 1990 and 2022. For more details on the methodology used, see J. Galán (2020), "The benefits are at the tail: Uncovering the impact of macroprudential policy on growth-at-risk", *Journal of Financial Stability*, 100831.

Chart 3.3

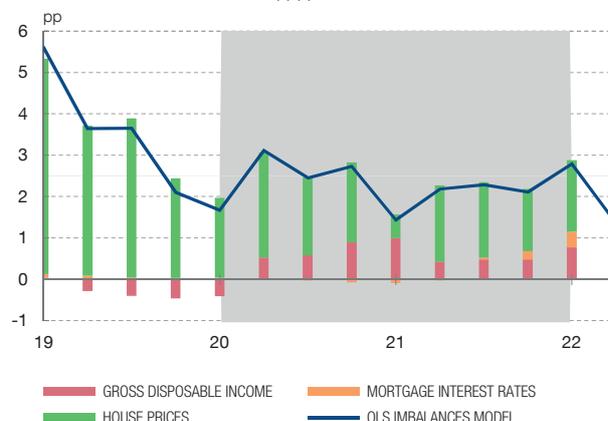
**THE INDICATORS OF REAL ESTATE MARKET IMBALANCES CONTINUE TO SHOW MODERATE SIGNS OF OVERVALUATION**

Since 2020, the indicators of price imbalance in the real estate market have held in positive values but close to their equilibrium value. Although house prices are the main determinant of imbalances, the sharp decline in disposable income in the past two years has also played a relevant role. The tightening of financial conditions could reduce these imbalances, and should therefore be monitored closely in the coming quarters.

1 INDICATORS OF HOUSE PRICE IMBALANCES (a) (b)



2 QUARTERLY CHANGE IN THE ORDINARY LEAST SQUARES (OLS) INDICATOR OF HOUSE PRICE IMBALANCES (a) (c)



SOURCES: INE and Banco de España.

- a The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the last systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the onset of the COVID-19 pandemic (2020 Q1-2021 Q4). Data updated as at June 2022.
- b The blue shaded area represents the minimum and maximum values of the four indicators of imbalances in house prices. The indicators are: (i) the real house price gap; (ii) the house price-to-household disposable income ratio gap; (iii) the ordinary least squares (OLS) model which estimates house prices based on long-term trends in household disposable income and mortgage interest rates; and (iv) the error correction model which estimates house prices based on household disposable income, mortgage interest rates and fiscal effects. The long-term trends are calculated in all cases using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 400,000. These indicators and the two-year rate of change in house prices have an equilibrium value of 0.
- c Breakdown of the factors that contribute to the quarterly changes in indicator (iii) in Chart 3.3.1 (see Note b). All are expressed in real terms.

which has not yet fully reversed (see Chart 3.3.2). Together with the indicators usually assessed in the FSR, the current edition also considers the two-year house price growth rate. This rate has been found to constitute a robust leading indicator of a build-up of risk in the real estate market, thus supplementing the evidence provided by the remaining indicators considered, which is particularly important in the present highly uncertain environment. It is currently showing a rising trend, but with values near its equilibrium level.

**The tightening of financial conditions following the ECB’s interest rate increases and the higher risk premia could prompt a moderation in the real estate market and reverse the incipient signs of imbalances.** Year-on-year house price growth stabilised at high levels in Q2 – slightly above 8% but below the 8.5% observed in Q1 (see Section 1.2.2 for further details). The deceleration in housing transactions in July and August, as compared with the growth observed in Q2, may also indicate an incipient weakening of demand in the residential sector, which could ease the price pressures but will not be confirmed until new information for more months becomes available. Therefore, close monitoring of developments in this market will have to continue.

**No warning signals are discernible in other complementary indicators for CCyB decisions.** In particular, there have been no significant upturns in the risk indicators associated with alternative estimations of credit imbalances or the current account balance.

**Credit standards in relation to collateral values have not deteriorated, but loan-to-income ratios for mortgages indicate a certain degree of vulnerability for some household segments.** The ratios measuring the leverage of new borrowers, e.g. the loan-to-price (LTP) ratio, held stable at the levels seen in recent years. Nor has the proportion of credit in the highest leverage bracket increased (see Chart 3.4.1). However, both the house price-to-income ratio<sup>6</sup> and the loan-to-income (LTI) ratio – the closest indicators of borrowers’ ability to pay – have risen steadily since the end of the global financial crisis (see Chart 3.4.2). An additional deterioration in income due to a potential downturn in activity could stress these ratios further. Also significant are the increased LTI ratios in lower income quintiles, which may experience more severe payment difficulties (see Chart 3.4.3). On the historical information available in Spain and the evidence available in other European countries, such high-LTI mortgages entail higher default risk, particularly in adverse macroeconomic scenarios (see Box 3.1).

**Mortgage interest rate spreads over reference rates have continued to narrow in the recent period.** The latest data available point to a moderate pick-up in interest rates in new fixed-rate mortgages, a segment that continues to account for the bulk of mortgage market activity. However, reference rates are rising more quickly, meaning that mortgage loan spreads narrowed further in 2022 H1, and more quickly than in 2021 (see Chart 3.4.4 and Box 1.2 in Chapter 1). Indeed, on the information available, the spread stands at its lowest level in recent years. The spread for floating-rate mortgages likewise contracted, albeit to a lesser extent.

**Broadly speaking, there has been a limited pass-through of the increase in market reference rates to interest rates in new mortgage lending.** This is so despite the widespread tightening of financial conditions in the markets, higher inflation and the deterioration in the macroeconomic outlook, which drive up the likelihood of adverse scenarios that entail a higher probability of default for mortgage borrowers. Although banks can generate higher income from these customers through the sale of other associated products, an appropriate loan origination policy calls for interest rates that duly reflect the cost of the funds and the risks incurred in the loan. The widespread tightening of the financial environment is likely to work towards reversing this trend of narrowing spreads in the coming quarters.

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<sup>6</sup> Statistical filters are applied to this data series to calculate the indicator of imbalances (ii) included in Chart 3.3.1.

Chart 3.4

**MORTGAGE CREDIT STANDARDS IN RELATION TO COLLATERAL VALUES HAVE NOT DETERIORATED, BUT THE LTI DISTRIBUTION INDICATES SOME VULNERABILITY. MOREOVER, INTEREST RATE SPREADS HAVE NARROWED IN THIS SEGMENT**

Mortgage credit standards in relation to collateral values, such as the loan-to-price (LTP) ratio, have been stable. However, the ratios more directly linked to borrowers' income, such as the loan-to-income (LTI) ratio, are on an upward path. Further, households in lower income quintiles have higher LTI ratios. Interest rate spreads have continued to narrow up to the start of 2022 Q4, particularly in fixed-rate mortgages. The general tightening of the financial environment could reverse this trend of narrowing spreads in the coming quarters.

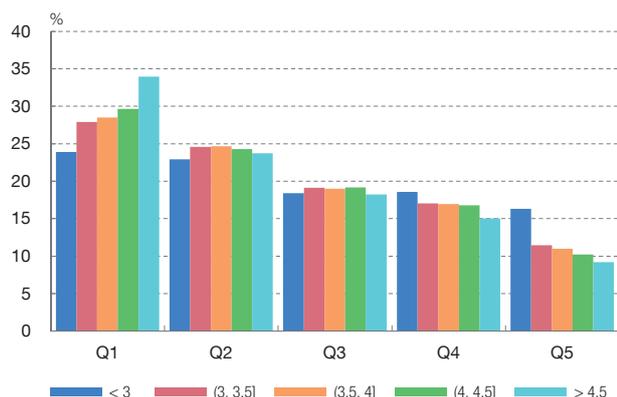
1 LTP RATIO (a)



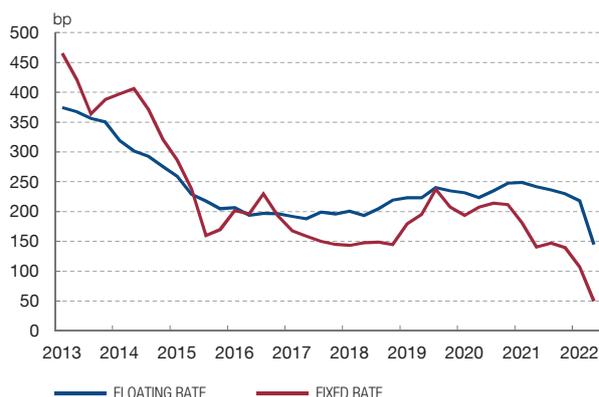
2 HOUSE PRICE-TO-PER CAPITA INCOME RATIO AND MORTGAGE-TO-PER CAPITA INCOME RATIO (b)



3 LTI RATIO BY INCOME QUINTILE (c)



4 SPREADS OVER RISK-FREE RATES (d)



SOURCES: Banco de España, Colegio de Registradores, INE, Agencia Tributaria and Refinitiv.

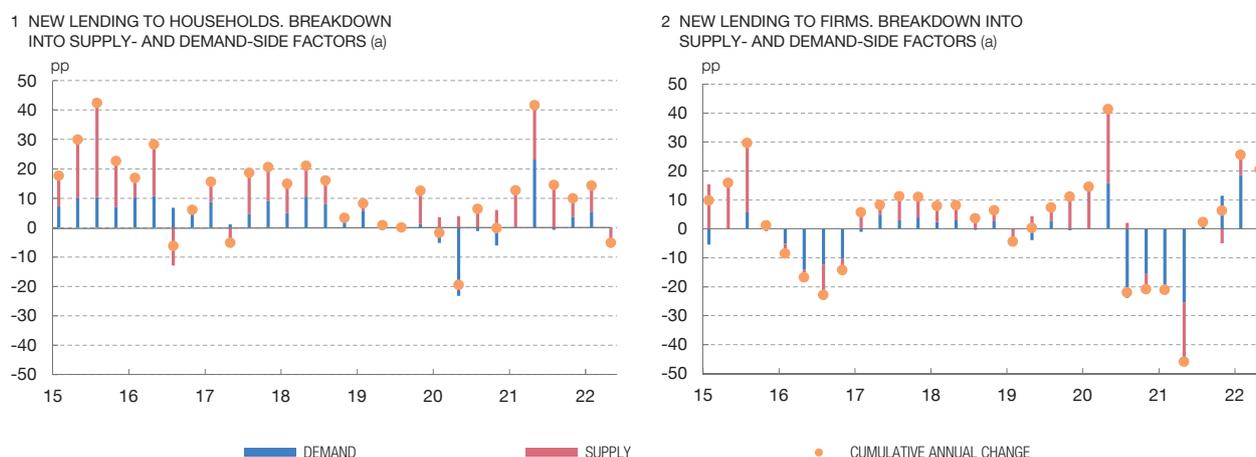
- a The LTP ratio is the amount of the mortgage principal relative to the registered property price. The average values are weighted by the capital of each mortgage. The indicator is calculated for a sample of new mortgages. Data up to 2022 Q2 (not all loans for this last quarter are yet available).
- b Property prices calculated based on price per square metre in the current quarter. All magnitudes are expressed in real terms. Per capita income refers to disposable income. The shaded areas represent crisis periods.
- c LTI at origination of mortgage loans existing in August 2022 and originated since 2000, by income quintile. The LTI ratio is the amount of the mortgage principal at origination relative to the gross income of households by postcode, drawn from State tax revenue service (Agencia Tributaria) data (which do not include the Basque Country or Navarre) for each year of origination. For each LTI level (e.g. LTI<3), the chart shows its distribution across household income quintiles.
- d Average interest rate spread of each new mortgage over the euro IRS curve. For floating-rate mortgages, the 1-year IRS rate is used to calculate the spread; for fixed-rate mortgages, the term equivalent to the mortgage term is selected. Data up to 2022 Q2.

**New lending to households contracted in the second quarter of 2022, mainly due to supply-side factors.** In 2022 Q2, new lending to households decreased for the first time since 2020 Q2. The econometric model estimates show that on this occasion the decline was driven mainly by supply-side factors, in contrast

Chart 3.5

### THE TIGHTENING OF SUPPLY-SIDE CONDITIONS REDUCED NEW LENDING TO HOUSEHOLDS IN 2022 Q2, WHILE DEMAND-SIDE FACTORS DROVE NEW LENDING TO FIRMS

The reduction in new lending to households in 2022 Q2 owed mainly to supply-side factors, particularly those relating to a tightening of credit standards in consumer lending. Meanwhile, new lending to firms continued to rise, fuelled by demand-side factors associated largely with the cost differential between market funding and bank loans (which, for the time being, only partially reflect the increase in market rates). This lending growth appears to stem from firms covering their liquidity needs and from precautionary reasons in response to the heightened uncertainty.



SOURCE: Banco de España.

a Cumulative annual change. Breakdown of the supply- and demand-side effects obtained using a structural vector autoregressive (S-VAR) model estimating the short-term relationships between credit and interest rate spreads, allowing for simultaneous shocks between the two variables. The models are estimated separately for lending to households and to firms. Data on new lending in euro area countries are used. New lending excludes renegotiations, overdrafts and credit card balances. For further details, see Box 1 in P. Alves, F. Arrizabalaga, J. Delgado, J. Galán, E. Pérez-Asenjo, C. Pérez Montes and C. Trucharte (2021), "Recent developments in financing and bank lending to the non-financial private sector", Analytical Articles, *Economic Bulletin* 1/2021, Banco de España.

with two years earlier (see Chart 3.5.1). This appears to be the result of an incipient tightening of credit standards by banks, as signalled by the Bank Lending Survey for 2022 Q2.<sup>7</sup> This sign of tightening access to financing for households has not yet translated into a significant tightening of mortgage price conditions for households accessing such loans (see Chart 3.4.4). Moreover, the decline in loans to households is concentrated in consumer lending.

**In contrast to the household segment, new loans to firms continued to grow in 2022 H1, almost exclusively due to demand-side factors.** Supply-side factors played a smaller role in the cumulative change in lending to firms to June 2022. Indeed, the considerable growth in lending to this segment was almost exclusively driven by demand-side factors (see Chart 3.5.2). This increased demand for bank loans may owe to the cost differential against market funding, due to the increase in market rates only partially passing through to bank lending. The growth in lending appears to stem from non-financial corporations covering their liquidity needs and

7 See A. Menéndez and M. Mulino (2022), "July 2022 Bank Lending Survey in Spain", Analytical Articles, *Economic Bulletin* 3/2022, Banco de España. The responses to the Bank Lending Survey for Q3 indicate an additional widespread tightening of credit supply conditions. See A. Menéndez and M. Mulino (2022), "October 2022 Bank Lending Survey in Spain". Analytical Articles, *Economic Bulletin* 4/2022, Banco de España.

also building up liquid assets given the present uncertainty. Indeed, bank deposits held by firms have also been more buoyant in recent months.

**Based on this set of macro-financial indicators and the heightened uncertainty in the current macroeconomic environment, the Banco de España has decided to hold the CCyB rate at the minimum level of 0%.** First of all, the persistence of the effects of the war in Ukraine, the geopolitical tensions and the uncertainty associated with the drastic reduction in the supply of Russian gas to Europe have increased the likelihood of adverse macroeconomic shocks in the coming months. Second, the inflationary tensions and the monetary measures needed to curb them will, respectively, lead to a deterioration in borrowers' real income and to a tightening of financing conditions. In view of this adverse environment – with a far higher probability of scenarios of very low growth or even recession –, holding the CCyB rate at 0% is considered the appropriate macroprudential response. However, the Banco de España is closely monitoring the vulnerabilities identified in the real estate market, and will take appropriate measures should they be heightened.

**Holding the CCyB at 0% is consistent with Warning 7/2022 of 22 September 2022 of the European Systemic Risk Board (ESRB) on vulnerabilities in the EU financial system.** In that Warning, the ESRB indicates that the risks to financial stability in the EU have increased significantly owing to the deterioration in the macroeconomic outlook, a sharp fall in asset prices, and the implications of these developments for credit quality. With this in mind, the ESRB urges the relevant authorities to preserve or enhance the resilience of the financial sector so that it can continue to support the real economy. The ESRB's assessment is consistent with that of the Banco de España on the macro-financial environment. As noted in the ESRB Warning and in an ECB Governing Council statement,<sup>8</sup> the national macroprudential policy response should be tailored to each country's specific, structural and cyclical conditions and, especially, the intensity of the imbalances detected. Against this backdrop, the decision to maintain the CCyB at 0% is based on the specific analysis of conditions in Spain.<sup>9</sup>

**Despite the high level of uncertainty, various European countries have decided to raise their CCyB rates in recent months.** The build-up of cyclical systemic imbalances continued in 2022 H1 in some European economies, leading their authorities to tighten certain macroprudential requirements. In some cases, bearing in mind that banks have significant voluntarily buffers and their 2022 results are

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8 See "Governing Council statement on macroprudential policies" of 2 November 2022.

9 According to a structural vector autoregressive model (SVAR), a 0.5 pp increase in the CCyB would trigger a decline both in credit (-0.8 pp) and in GDP (-0.3 pp). This cost is calculated in average terms for a full economic cycle. However, the cost of activating the CCyB would be far higher during a recession, reducing credit by an estimated -1.7 pp and GDP by an estimated -0.8 pp. Moreover, there is a standard 12-month phase-in period once new CCyB rates are announced, which makes activating the CCyB particularly problematic in an environment in which downside risks predominate in the near term.

Table 3.1

**RECENT MACROPRUDENTIAL CAPITAL BUFFER MEASURES IN EUROPE (a)**

Country	Latest CCyB announced (%)	CCyB implementation date	Latest sectoral SRB announced (%)	Sectoral SRB implementation date
Belgium			9.00 for retail IRB exposures	
Bulgaria	2.00	01.10.2023		
Czech Republic	2.50	01.04.2023		
Denmark	2.50	31.03.2023		
Germany			2.00 for exposures to the residential real estate sector	01.02.2023
Hungary	0.50	01.07.2023		
Ireland	0.50	15.06.2023		
Lithuania	1.00	01.10.2023		
Norway	2.50	31.03.2023		
Slovakia	1.50	01.08.2023		
Slovenia			1.00 for exposures to the residential real estate sector	01.01.2023
Sweden	2.00	22.06.2023		
The Netherlands	1.00	25.05.2023		
United Kingdom	2.00	05.07.2023		

**SOURCES:** ESRB, BIS and national authorities.

**a** This table shows CCyB and SRB announcements made after the publication date of the Spring 2022 FSR (27 April 2022). As a general rule, CCyB rate increases are applicable 12 months after their announcement. Denmark and Norway will adopt a CCyB rate of 2% on 31.12.2022, while the Czech Republic announced a CCyB of 2% to be implemented on 01.01.2023. SRB = systemic risk buffer.

expected to improve on those of previous years, these measures have also sought to create macroprudential space to ensure the economies are better placed to withstand potential strains should losses materialise in 2023. Specifically, since the publication of the last FSR, ten national authorities in the EU/EEA plus the United Kingdom have announced decisions to activate or raise their CCyB rates (see Table 3.1).<sup>10</sup> Other authorities have opted to activate measures aimed at addressing vulnerabilities in the real estate sector only, such as the sectoral systemic risk buffer (sSyRB) in Germany and Slovenia, or impose limits on credit standards.

**In July 2022 the Banco de España announced<sup>11</sup> the designation of other systemically important institutions (O-SIIs), along with their macroprudential capital buffers applicable in 2023** (see Table 3.2). These banks are subject to additional capital requirements to strengthen their solvency and mitigate the systemic

<sup>10</sup> Other European countries had already activated, or announced their intention to raise, the CCyB: Bulgaria, Croatia, Estonia, France, Germany, Iceland, Luxembourg, United Kingdom and Romania. The [ESRB website](#) provides a full list of countries where the CCyB is activated.

<sup>11</sup> See “[The Banco de España updates the list of other systemically important institutions and sets their macroprudential capital buffer rates for 2023](#)”, press release of 22 July 2022.

Table 3.2

**SPANISH SYSTEMICALLY IMPORTANT INSTITUTIONS AND ASSOCIATED CAPITAL BUFFERS**

Legal Entity Identifier (LEI)	Institution	Designation (a)	Capital buffer requirement in 2022 (%)	Capital buffer requirement in 2023 (%)
5493006QMFDDMYWIAM13	Banco Santander, SA	G-SII and O-SII	1.00	1.00
K8MS7FD7N5Z2WQ51AZ71	Banco Bilbao Vizcaya Argentaria, SA	O-SII	0.75	0.75
7CUNS533WID6K7DGF187	CaixaBank, SA	O-SII	0.375	0.50
SI5RG2M0WQQLZCXKRM20	Banco de Sabadell, SA	O-SII	0.25	0.25

**SOURCE:** Banco de España.

**a** G-SII = global systemically important institution. O-SII = other systemically important institution.

adverse effects they might cause to the financial system. The list of four banks designated as O-SIIs (i.e. domestic systemically important banks) has not changed since last year's exercise. The buffers applicable in 2023 remain unchanged for three of the four banks identified as O-SIIs. One bank, CaixaBank, SA, saw its buffer raised to 0.5% due to its merger with Bankia, SA, in March 2021. This buffer recalibration, effective from 1 January 2023, was envisaged in the Banco de España's announcement last year.<sup>12</sup>

## 3.2 Regulatory and supervisory developments relevant to financial stability

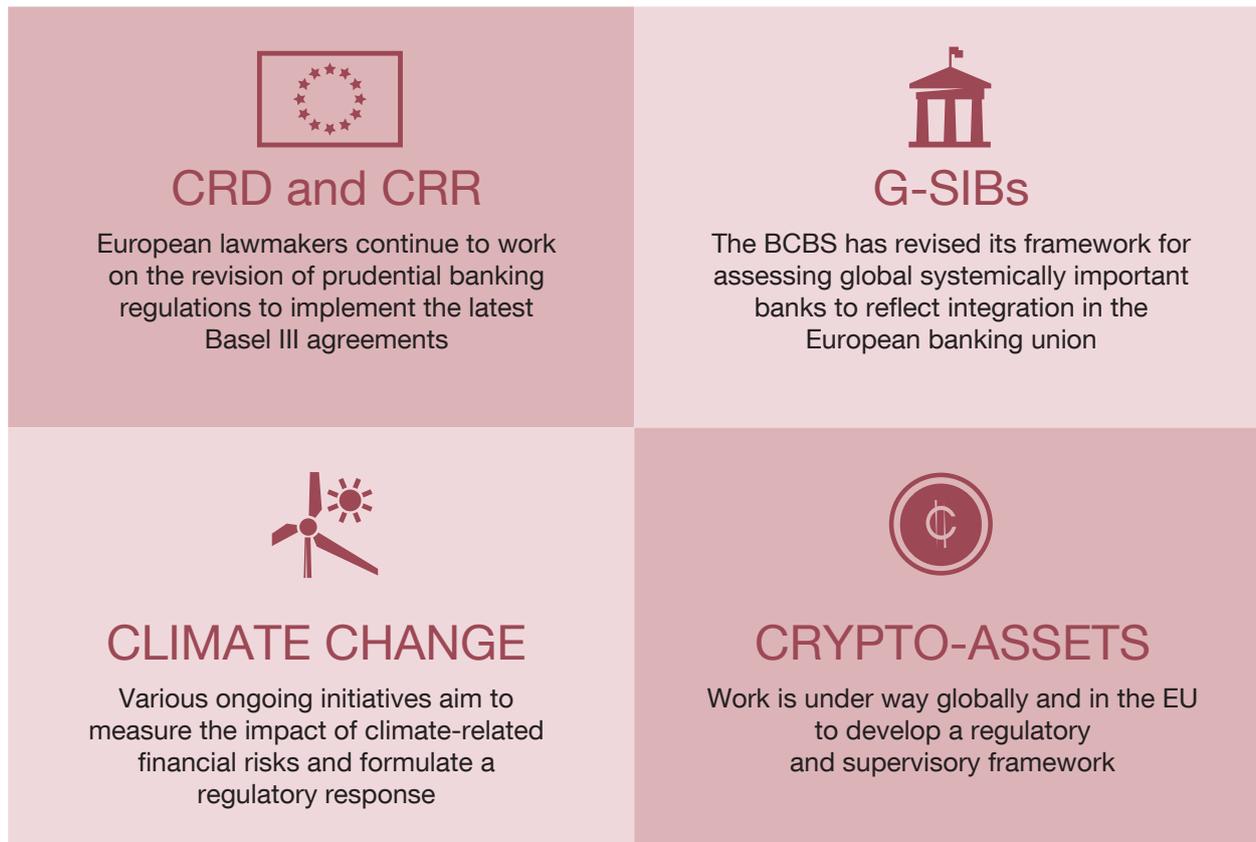
**The legislative process of revising banking regulations to incorporate the latest agreements of the Basel Committee on Banking Supervision (BCBS) continues in the EU.** The European Commission's proposal to amend the Capital Requirements Regulation (CRR III) and the Capital Requirements Directive (CRD IV) was published in October 2021. In April the ECB issued an opinion<sup>13</sup> on the legislative proposal to amend the Directive (CRD), having already done so in March with respect to the Regulation (CRR), which welcomes, inter alia, the Commission's proposals to introduce an output floor on minimum capital requirements and to impose stricter environmental, social and governance risk-related requirements on credit institutions. As regards the output floor, whose aim is to improve comparability of banks' risk weightings, thus increasing the credibility of banks' estimations, the Commission's proposal puts forward various mechanisms to regulate the interaction between the minimum capital requirements (Pillar 1) and the setting of Pillar 2 supervisory requirements and macroprudential buffers, in order to avoid a double-counting of risks. The ECB opinion considers that macroprudential buffers, as presently used,

<sup>12</sup> See the Banco de España [press release](#) of 29 July 2021.

<sup>13</sup> See "Opinion of the European Central Bank of 27 April 2022 on the Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/36/EU as regards supervisory powers, sanctions, third-country branches, environmental, social and governance risk (CON/2022/16)".

Figure 3.1

**KEY REGULATORY DEVELOPMENTS RELEVANT TO FINANCIAL STABILITY**



address macroprudential risks which are different from the output floor's target of reducing risks of excessive variability or lack of comparability of risk weights from the use of internal models by institutions, thereby excluding the possibility of interaction with it. This development, along with other highlights, is summarised in Figure 3.1.

**As part of the planned review of the EU macroprudential framework for the banking sector, the European Commission has published a feedback statement on the responses to a recent public consultation<sup>14</sup> aimed at informing a possible legislative proposal.** Most of the approximately 50 contributions received by the European Commission to March, from authorities (regulators, central banks and ministries), firms and non-governmental organisations, have focused on buffer usability, cross-country consistency in the use of macroprudential tools and proposals for reviewing the instruments currently available.<sup>15</sup> These comments,

14 See the additional information published by the European Commission in "Targeted consultation on improving the EU's macroprudential framework for the banking sector".

15 The Banco de España, as a member of the Eurosystem and the European System of Financial Supervision (ESFS), was involved in the preparatory discussions for the responses sent by the ECB, the EBA and the ESRB to the European Commission's public consultation.

together with the advisory reports of the ECB, the EBA and the ESRB, will serve as a basis for the European Commission's future draft legislative proposal to amend the CRR and the CRD.

**The BCBS has finished revising the framework for evaluating global systemically important banks (G-SIBs) to incorporate the implications of the banking union.**<sup>16</sup> With the aim of properly reflecting the level of integration achieved in the banking union – as a supranational jurisdiction with single supervisory and resolution mechanisms – the revised methodology provides for a parallel set of G-SIB scores by reducing cross-border exposures within the banking union by 66%. This adjustment, called ASTRA (Adjustment for SStructural Regional Arrangements), is tantamount to recognising that the Single Supervisory Mechanism and the Single Resolution Mechanism are fully operational, but that the third pillar of the banking union – the European Deposit Insurance Scheme (EDIS) – remains to be accomplished. The new parallel systemic importance scores may even entail the reclassification of an institution to a lower bucket (but not its removal from the list) and does not affect the calculation of European institution's scores outside the EU. The announcement of the BCBS was followed by the publication on 27 June of a statement<sup>17</sup> by the ECB fleshing out the application of ASTRA.

**The BCBS analysed buffer usability and cyclicity in its second report<sup>18</sup> on the impact of the Basel reforms.** The report, published in October, argues that the Basel III reforms have played a key role in enabling banks to continue operating amid the various shocks in recent years. The BCBS finds signs of a positive relationship between the size of banks' voluntary buffers (in excess of regulatory requirements) and loan origination. Given that the shocks that may affect the banking sector are manifold and unpredictable – the COVID-19 pandemic being a prime example – the BCBS supports the ability of authorities to set, as a precautionary measure, a positive CCyB rate also in neutral stages of the credit cycle where there is yet no evidence of a build-up of systemic imbalances.<sup>19</sup>

**The BCBS also published in June a list of principles<sup>20</sup> for the effective management and supervision of climate-related financial risks.** The aim is to promote a principles-based approach to improve both risk management by banks and supervisory practices relating to financial risks from climate change. The BCBS

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16 See "Basel Committee finalises principles on climate-related financial risks, progresses work on specifying cryptoassets' prudential treatment and agrees on way forward for the G-SIB assessment methodology review" of 31 May 2022.

17 See "Governing Council statement on the treatment of the European banking union in the assessment methodology for global systemically important banks" of 27 June 2022.

18 See "BCBS Report on buffer usability and cyclicity in the Basel framework" of 5 October 2021.

19 See "BCBS Newsletter on positive cycle-neutral countercyclical capital buffer rates" of 5 October 2021.

20 See "BCBS Principles for the effective management and supervision of climate-related financial risks" of June 2022.

seeks to provide a framework for banks and supervisors that allows sufficient flexibility and takes into account the heterogeneity and evolving practices in this area. In tandem, the Financial Stability Board (FSB) has published its first annual report<sup>21</sup> on the progress made by international bodies to address financial risks from climate change.

**The ECB and the ESRB published a joint report<sup>22</sup> on the impact of potential future climate risk-related shocks on the European financial system.** The report finds that climate risks may spread rapidly and damage both firms and banks, and makes several suggestions for a potential macroprudential policy response, although the debate on the latter is still at an early stage. Moreover, the EBA has submitted a discussion paper<sup>23</sup> for consultation analysing the role of environmental risks within the prudential framework. Among other aspects, the paper studies the possible incorporation of environmental risks into the Pillar 1 prudential framework for banks and investment firms, an issue not without controversy owing to its enormous complexity, since it involves combining a historical approach over short horizons with a forward-looking approach over much longer horizons (for climate risks). On the basis of that discussion paper, the EBA shall prepare a report at the European Commission's proposal, in the framework of the current CRR review, which will assess the prudential treatment of exposures subject to environmental and/or social impacts.

**The BCBS published the second consultation document on the prudential treatment of banks' exposures to crypto-assets.** The second public consultation<sup>24</sup> on the prudential treatment of crypto-assets ended on 30 September 2022. The BCBS intends to set standards on this matter, on the basis of the submissions, before the end of the year. Moreover, due to developments in crypto-asset markets in recent months, in March the European Supervisory Authorities (EBA, ESMA and EIOPA) published a statement<sup>25</sup> warning about the risks that crypto-assets pose for EU consumers.

**Meanwhile, the FSB has submitted for public consultation a proposed framework for the international regulation of crypto-asset activities.**<sup>26</sup> This consultation was preceded by a statement<sup>27</sup> in July on the current crypto-asset situation worldwide. In this statement, the FSB highlighted the intrinsic volatility of these instruments and their structural vulnerabilities and growing interconnectedness

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21 See "FSB Roadmap for Addressing Financial Risks from Climate Change" of July 2022.

22 See "Report on the macroprudential challenge of climate change" of July 2022.

23 See "EBA launches discussion on the role of environmental risks in the prudential framework", press release of 22 May 2022.

24 See "Basel Committee publishes second consultation document on the prudential treatment of banks' cryptoasset exposures" of June 2022.

25 See the joint press release "EU financial regulators warn consumers on the risks of crypto-assets".

26 See the press release "FSB proposes framework for the international regulation of crypto-asset activities" of 11 October 2022.

27 See "FSB issues statement on the international regulation and supervision of crypto-asset activities" of July 2022.

with the traditional financial system, together with the need to ensure they are subject to robust regulation and supervision. In October, the FSB issued: (i) a set of recommendations aimed at promoting consistency of various regulatory and supervisory approaches to crypto-asset activities and markets and at strengthening coordination and information sharing among authorities; and (ii) a review of the high-level recommendations for the regulation, supervision and oversight of stablecoins<sup>28</sup> in order to more effectively address the attendant risks to financial stability.

**At European level, the Council presidency and the European Parliament reached a provisional agreement on the markets in crypto-assets regulation (MiCA) proposal.**<sup>29</sup> This regulation, which covers issuers of unbacked crypto-assets and stablecoins<sup>30</sup> as well as trading, advisory and exchange services and the wallets where crypto-assets are held, will protect investors and preserve financial stability, while allowing innovation and fostering the attractiveness of the crypto-asset sector. MiCA will also cover any type of market abuse, notably market manipulation and insider dealing. Although some Member States already have national legislation for crypto-assets, there was no specific regulatory framework at EU level, so this is a significant step towards harmonised regulation at European level. However, it should be noted that the implementation of MiCA will not be immediate and that some of the trading in these instruments (such as DeFi)<sup>31</sup> is not covered, given the rapid pace of change in these technologies.

**The ESRB submitted its proposals in the context of the European Commission's review of the European Market Infrastructure Regulation (EMIR).**<sup>32</sup> Specifically, the ESRB proposes changes to the current central counterparty (CCP) tiering framework, the frequency of reviews and the way the qualitative and quantitative criteria are taken into consideration, which should allow for more professional judgement and flexibility in the tiering framework. This would better reflect the systemic relevance certain third country CCPs (including those from the UK) have for the EU or for one or more of its Member States. The ESRB also includes additional proposals to further strengthen the EU framework for central clearing aimed primarily at mitigating financial stability risks.

**The European Commission continued its review of the Mortgage Credit Directive (MCD).** In response to the consultation on the macroprudential framework,

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28 See also the [special chapter](#) on crypto-assets of the Banco de España's Spring 2022 FSR.

29 See the press release "[Digital finance: agreement reached on European crypto-assets regulation \(MiCA\)](#)" of June 2022.

30 Stablecoins are backed by assets and have automatic value stabilisation mechanisms. See C. Catalini and A. de Gortari (2021), "[On the Economic Design of Stablecoins](#)".

31 Decentralised Finance (DeFi) is an alternative financial infrastructure to the banking system, based on the use of smart contracts in decentralised networks, primarily using the unbacked crypto-asset Ethereum, with the aim of replicating the functioning of financial products such as debt contracts, derivatives and asset management without the formal contractual framework of traditional finance.

32 See "[Letter on ESRB view on the targeted EMIR review with respect to central clearing in the EU](#)" of July 2022.

the ESRB considers<sup>33</sup> that borrower-based measures (BBMs), such as limits to loan-to-income (LTI), should be included in the MCD as well as in the CRD. Among other aspects, the response of the ESRB highlights that including these measures would allow authorities to apply BBMs to loans granted by all types of lenders (including insurance companies, investment funds and pension funds), thus eliminating the possibility of regulatory arbitrage. The EBA's response<sup>34</sup> to the consultation suggests, among other things, including BBMs in the information provided to consumers to promote responsible lending and borrowing while contributing to financial stability.

**Lastly, at the national level, it should be highlighted that the Banco de España submitted a draft Circular on the Central Credit Register (CCR) for public consultation in October.** The main objective of the draft regulation<sup>35</sup> is to adapt the current Banco de España Circular 1/2013 of 24 May 2013 on the Central Credit Register to various changes introduced by Order ETD/600/2022 of 29 June 2022 modifying the dates on which the reduction of exemptions from reporting to the CCR will enter into force. As a result, from 2023 reporting institutions will have to report to the CCR, on an individual basis, all transactions of borrowers whose cumulative exposure to the institution is equal to or exceeds €3,000. This lower reporting threshold will increase the coverage of the information available in the CCR and allow the Banco de España and the institutions to conduct more comprehensive and thorough analyses of current and future borrowers' credit quality.

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33 See "ESRB response to the European Commission consultation on the review of the mortgage credit directive" of 31 March 2022.

34 See "EBA replies to European Commission's call for advice on the Mortgage Credit Directive review" of 24 June 2022.

35 See "Draft Banco de España Circular amending Banco de España Circular 1/2013 of 24 May 2013 on the Central Credit Register" of 3 October 2022 (in Spanish only).

